American Black Bear: *Ursus americanus*

**Historic Distribution**
- Covered most of North America
- 16 subspecies (Hall 1981)
- Present distribution restricted to less settled, forested regions (Pelton et al. 1994)

**Subspecies**
- Glacier, Kenai, Queen Charlotte Island, Kermode, Dall, American Black Bear: *Ursus americanus*
  - Louisiana, Florida, Eastern Olympic, New Mexico, Cinnamon, Mexican, Newfoundland, Kermode, West Mexican, Vancouver Island
Historically abundant in Louisiana, eastern Texas, and southern Mississippi & southern Arkansas (Hall 1981)

Habitat Requirements: Relatively large areas of contiguous bottomland and upland forests (USFWS 2009)

Current Distribution

Breeding Populations

Bear Sightings

Frequent

Occasional

Rare
Population Decline: Habitats Loss and Fragmentation

Population estimated as low as 80-120 individuals (St. Amant 1959)

Suitable habitat reduced by >80% by 1980 (Neal 1992)
Remaining habitat reduced in quality by fragmentation (Neal 1992)

Population Decline: Overutilization

Riparian Lands of the Mississippi River: Past—Present—Prospective, F. H. Thompkins (1901)
Theodore Roosevelt & Holt Colter 1902

1995 USFWS adopted a recovery plan prepared with the Black Bear Conservation Committee.

### Justification

**Criteria for Recovery & Delisting**  
(Bowker and Jacobson 1995)

1. At least two viable subpopulations, one each in the Tensas and Atchafalaya River Basins;
2. Establishment of immigration and emigration corridors between the two subpopulations;
3. Protection of the habitat and interconnecting corridors that support each of the two viable subpopulations used as justification for delisting.

### Current Distribution

Breeding Populations

- **Bear Sightings**
  - **Frequent**
  - **Occasional**
  - **Rare**
Addressing the Recovery Criteria: Is the coastal population viable?

Hypothesis:
Current black bear growth rates are positive for the coastal Louisiana population and the probability of persistence is >95% over the next 100 years.

Addressing the Recovery Criteria: Is the coastal population viable?

Objective: Population Viability Analysis

- PVA Components
- Starting Population Size
- Mean Growth Rate
- Process Variance

Addressing the Recovery Criteria: Is the coastal population viable?

Objectives:
Estimate Coastal Population:
- Abundance
- Density
- Apparent Survival Rates
- Population Growth Rates
- Process Variance
Population Modeling:
Closed Population Models- Assume no births, immigration, deaths, emigration
Open Population Models- Allows additions & subtractions but less precise

Robust Design (Pollock 1982)
Robust to unequal probability of capture and survival
Population open between 3 primary sampling periods-years
Population closed within 8 secondary sampling periods-weeks

Methods: DNA Mark-Recapture (Woods et al. 1999)
• DNA from sampled hair is "mark"
• Marks can not be lost
• Few marks misread
• Minimal trap response bias
• Cost effective
• Estimates more precise with equal capture probability
Average annual home range for coastal females: 11.8 km² (J. Murrow personal communication)

Otis et al. (1978) recommend at least 4 traps/home range for mark-recapture

Study area: ~348 km²
118 hair snares
104/118 sites visited
672 samples collected
Awaiting analysis results
Acknowledgements:

- Committee Members Joe Clark, Arnold Saxton
- Technicians: John Draper, John Ripley
- Landowners of St. Mary & Iberia Parish
- LDWF, USGS, FWS, BBCC, UT Institute of Agriculture

References:

